

November 17th, 2025

Mr. David Miller
Chair of the Investment Committee
California Public Employees' Retirement System
400 P Street
Sacramento, CA 95814

Re: Item 5a: Asset Liability Management: First Reading of Public Employees' Retirement Fund Recommendations

Dear Mr. Miller,

You requested Wilshire's opinion on Staff's recommendation to move forward with a Total Portfolio Approach. These recommendations encompass adoption of a Total Fund risk target based on approved capital market assumptions. The risk target is codified through establishment of a Reference Portfolio mix and an Active Risk Limit. Wilshire will touch on each of these recommendations in turn.

Total Portfolio Approach Process

A Total Portfolio Approach (TPA) strives to manage the PERF portfolio in a holistic and agile manner, with a focus on total fund performance. Investments will be evaluated based on their expected contribution to the overall fund's objectives rather than in comparison to asset class benchmarks. This requires the establishment of a common framework for comparing investments across asset classes and significant collaboration across teams. Wilshire will provide oversight on behalf of the Board when evaluating the reasonableness of this framework and its key inputs over time.

TPA delegates portfolio construction authority that was historically handled through strategic asset allocation decisions to Staff. This allows a more opportunistic approach in investment underwriting. CalPERS Investment Belief 6 recognizes that strategic asset allocation is the dominant determinant of portfolio risk and return. Consistent with its importance to the organization, the asset allocation decision also touches upon a meaningful number of CalPERS' other core Investment Beliefs. Most notably, Investment Belief 1: Liabilities must influence the asset structure and Belief 2: a long-term investment horizon is a responsibility and an advantage. TPA does not change these investment beliefs. Rather, it establishes clear accountability for all active investment decisions that deviate from the Reference Portfolio.

Moving to a TPA framework is not without risk. Shifting to TPA requires significant changes in governance, reporting, and decision-making processes. These changes may pose implementation challenges and require substantial internal transition workstreams. A TPA Steering Committee of INVO Executives has been established to provide oversight and leadership of those workstreams. In addition, cultural changes could impact asset class teams that are used to working within their

area of expertise versus assessing investment opportunities more holistically for their total fund impact.

Wilshire is comfortable that the Board retains the authority to set the overall market risk for the portfolio as well as a limit on the amount of active risk taking. In tandem, the Board will continue to oversee the total portfolio risk profile, while delegating specific investment decision-making to INVO. This governance model is an evolution of the strategic asset allocation approach which CalPERS has historically utilized. Wilshire will work closely with Staff in updating the investment policies to comply with the TPA governance framework.

Recommended Reference Portfolio

The Reference Portfolio will serve as the primary point of comparison to assess whether or not active investment decisions are adding value. It reflects the Board's market risk tolerance necessary to achieve the portfolio's long-term objectives. Staff is recommending a Reference Portfolio (RP) composed of 75% Global Equity and 25% U.S. Treasuries. This portfolio, when combined with active risk taking, has a long-term expected return of 6.9% with portfolio volatility of 12.7%. For comparison, the current portfolio has an expected return of 6.8% with expected risk of 12.0%. The proposed portfolio increases the overall risk level in pursuit of higher returns.

In modeling the portfolios, Staff utilized updated capital market assumptions (CMAs) from its well-communicated survey process. As both a participant in CalPERS' survey process and in having the opportunity to compare the survey results to Wilshire's own in-house CMAs, we are comfortable that the result of using the survey's consensus views to drive these important inputs are reasonable and appropriate estimates of the capital market environment.

The recommended RP for the PERF is designed to meet the discount rate when combined with active risk taking. It aims to balance the variation in employer costs with the likelihood of improving the funded status of the PERF. Additionally, this approach aligns more fully with Investment Belief #7, which emphasizes that CalPERS should measure its investment performance relative to a reference portfolio of passively managed assets to ensure that active risk is being compensated at the Total Fund level over the long term. However, it is worth noting that the higher equity allocation increases total portfolio volatility to 12.7% from 12.0%, which in turn marginally raises expected tail risk and the potential for significant drawdowns.

At the appropriate time, Wilshire will provide a recommendation for the specific equity and bond indexes used to calculate the Reference Portfolio's return and risk for Board approval.

Recommended Active Risk Limit

The Active Risk Limit (ARL) is used to control the extent to which the actual PERF portfolio deviates from the Reference Portfolio benchmark, ensuring that the pursuit of excess returns stays within acceptable risk boundaries. That is, it restricts the ability of Staff to take excessive or unintended risks that could lead to significant underperformance. This enables the Board to control and monitor risk parameters effectively, ensuring that the portfolio's risk profile remains consistent

with their risk tolerance and mandate. The ARL offers a greater level of simplicity by consolidating all existing asset class policy ranges into a single overall risk limit. Further, the ARL promotes accountability, as INVO must justify their active investment decisions, such as for example adding to private equity or infrastructure, within the agreed-upon risk budget. It also fosters transparency by providing stakeholders with a clear metric (tracking error) to assess whether outperformance justifies the risks taken.

The ARL will capture the risk impact of all investment allocations outside of publicly traded global equities and U.S. Treasuries. This includes exposures to investment grade structured and corporate bonds, high yield, emerging market debt, private equity, real estate and infrastructure.

Importantly, the active risk level will be calculated based on a framework that incorporates strategy benchmarks, universe characteristics, and the estimated funding mix together with an external risk modeling platform. This structure is better able to capture the underlying economic risks of strategies that lack granular and timely valuations. Because the active risk calculation is model based, it will differ from the realized portfolio volatility figures which are impacted by the infrequent and smoothed valuations of private assets.

It should be noted that the levels of realized return variance from the RP are likely to be much higher than comparisons to the PERF's historical realized tracking error against its strategic asset allocation benchmark. Establishing reasonable expectations around these short-term measurements will position the Board to properly monitor and respond to future performance results. Since this is a somewhat nuanced point but one that is critical to understand, we would be happy to address any questions you may have in more detail during the Investment Committee meeting.

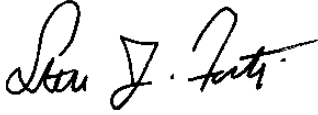
Wilshire would note that consolidating asset class ranges and discretion into a single active risk metric may oversimplify more complex risk factors. Investment Belief #9 captures that risk is multi-faceted and not fully captured by measures such as volatility or tracking error. Wilshire is comfortable that Staff understands the nuance of risk management to supplement the stated active risk limit. This includes an emphasis on liquidity management, sustainability factors, and strong oversight and governance. Wilshire is comfortable that the recommended active risk level provides Staff with the ability to allocate across capital market strategies in a judicious manner to extract additional strategic market premiums.

Conclusion

As the Board consultant, Wilshire is comfortable that moving forward with TPA is prudent, albeit not without risks. We regularly discuss these risks, and the steps being taken to mitigate them, with senior INVO staff. Approving the Reference Portfolio mix and Active Risk Limit as recommended by Staff is an appropriate step in formally adopting the TPA framework. We expect the TPA process to be one that is not set in place at a specified time in the future. Rather it is going to be a continual process of improvement to help drive positive performance results for the PERF.

Please do not hesitate to contact us if you have any questions or require anything further. We look forward to discussing this item with you during the November Investment Committee meeting.

Best Regards,

A handwritten signature in black ink, appearing to read "Steven J. Foresti".

Steven J. Foresti - Senior Advisor, Investments
Wilshire Advisors LLC

A handwritten signature in black ink, appearing to read "T. Toth".

Thomas Toth, CFA - Managing Director
Wilshire Advisors LLC